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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,432	04/16/2004	David Allen Kastrup	140728 (12729-369)	9853
29399 7590 03/06/2009 JOHN S. BEULICK (12729) C/O ARMSTRONG TEASDALE LLP ONE METROPOLITAN SQUARE SUITE 2600 ST. LOUIS, MO 63102-2740				
EXAMINER NGUYEN, ANDREW H				
ART UNIT 3741		PAPER NUMBER		
NOTIFICATION DATE 03/06/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

### Office Action Summary

**Application No.**

10/826,432

**Applicant(s)**

KASTRUP ET AL.

**Examiner**

ANDREW NGUYEN

**Art Unit**

3741

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10, 12-16, and 18-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "wherein at least one opening extends from said radially inner surface through said radially outer surface ..." must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. The openings 122 extend through the secondary swirler, but do not extend through the radially outer surface (or any surface) of the venturi.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-10, 12-16, and 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to disclose "wherein at least one opening extends from said radially inner surface through said radially outer surface ...". The openings were disclosed as extending through the secondary swirler to the gap, but not through any surface of the venturi.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,418,726 to Foust et al (Foust).

In reference to claims 7 and 14:

Foust teaches:

*A combustor for a gas turbine engine, said combustor comprising:  
a venturi (Fig 3; 78) and  
a secondary swirler defining an air passage circumferentially around said venturi  
(110), said secondary swirler coupled to said venturi (swirler 110 coupled through  
structure 104, 100, and 106) such that a gap is defined between a radially inner  
surface of said secondary swirler and a radially outer surface of said venturi  
(passage 102), wherein at least one opening extends from said radially inner  
surface through said radially outer surface to direct air from said air passage into  
said gap (Fig 3; passage opening between conduits 102 and 92; "to direct ..."  
defines the direction of flow – holds no patentable weight because the structure  
is the same; air is capable of flowing in either direction when the device is not in  
operation).*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 7-8, 13-15, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,871,501 to Bibler et al. (Bibler). The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

In reference to claim 7:

Bibler teaches:

*A combustor for a gas turbine engine, said combustor comprising:  
a venturi (107) and  
a secondary swirler defining an air passage circumferentially around said venturi (140, 100), said secondary swirler coupled to said venturi (swirler 140, 100 coupled to venturi 107 downstream near flange 106) such that a gap is defined between a radially inner surface of said secondary swirler and a radially outer surface of said venturi (gap between numerals 100 and 104), wherein at least one opening extends from said radially inner surface through said radially outer surface to direct air from said air passage into said gap (Fig 3; ports 98; "to direct ..." defines the direction of flow – holds no patentable weight because the structure is the same; air is capable of flowing in either direction when the device is not in operation).*

In reference to claims 8 and 20:

Bibler further teaches:

*further comprising a primary swirler (62) coupled to said venturi such that said venturi is between said primary and secondary swirlers (venturi wall 78).*

In reference to claims 13 and 15:

Bibler further teaches:

*wherein said gap facilitates reducing an operating temperature of said venturi (gap insulates venturi from convective heat transfer of airflow through secondary swirler)*

In reference to claim 14:

Bibler teaches:

*A gas turbine engine comprising a combustor (abstract) comprising an annular air swirler (140, 100) and an annular venturi (107), said annular air swirler defines an air passage and is coupled to said venturi (swirler 140, 100 coupled to venturi 107 downstream near flange 106) such that a gap is defined between a radially inner surface of said air swirler and a radially outer surface of said venturi (gap between numerals 100 and 104) wherein at least one opening extends from said radially inner surface through said radially outer surface to direct air from said air passage into said gap (Fig 3; ports 98; "to direct ..." defines the direction of flow – holds no patentable weight because the structure is the same; air is capable of flowing in either direction when the device is not in operation).*

In reference to claim 18:

Bibler further teaches:

*wherein said gap facilitates maintaining an operating temperature of said venturi below a predetermined temperature (gap insulates venturi from convective heat transfer of airflow through secondary swirler; venturi will inherently fall below a certain temperature).*

In reference to claim 19:

Bibler further teaches:

*wherein said gap facilitates reducing coking of said venture (gap insulates venturi from convective heat transfer of airflow through secondary swirler; reduced venturi temperature will inherently reduce coking).*

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 9-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

US Patent 6,418,726 to Foust et al (Foust) in view of US Patent 4,584,834 to

Koshoffer et al. (Koshoffer).

In reference to claims 9 and 16:

Koshoffer teaches:

*wherein at least a portion of said venturi is slidably coupled to a portion of one of said primary and said secondary swirlers.*

Koshoffer teaches a gas turbine engine combustor comprising primary and secondary swirlers that are slidably coupled (col 4 lines 52-60) in order to accommodate differential thermal expansions and contractions. It would have been obvious to one of ordinary skill in the art at the time of the invention to slidably couple the components of Angell in order to accommodate differential thermal expansions and contractions, as explicitly taught by Koshoffer.

In reference to claim 10:

Koshoffer teaches:

*wherein at least a portion of said venturi is coupled to a portion of one of said primary and said secondary swirlers in a slide fit, said slide fit facilitates accommodating thermal growth of at least one of said primary and said secondary swirler with respect to said venturi.*

Koshoffer teaches a gas turbine engine combustor comprising primary and secondary swirlers that are slidably coupled (col 4 lines 52-60) in order to accommodate differential thermal expansions and contractions. It would have been obvious to one of ordinary skill in the art at the time of the invention to slidably couple the components of Foust in order to accommodate differential thermal expansions and contractions, as explicitly taught by Koshoffer.

10. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,418,726 to Foust et al (Foust) in view of US Patent 5,220,786 to Campbell (Campbell).

In reference to claim 12:

Campbell teaches:

*wherein said venturi radially outer surface comprises a layer of thermal barrier coating.*

Campbell teaches a thermally protected venturi for a combustor dome. Campbell teaches applying thermal barrier coating to a radially outer surface of the venturi (28) in order to thermally protect or insulate the venturi from hot air flowing along the outer surface (col 3 lines 8-12). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply thermal barrier coating to the outer surface of the venturi of Foust in order to thermally protect it from hot air, as explicitly taught by Campbell.

***Response to Arguments***

11. Applicant's arguments with respect to claims 7-10, 12-16, and 18-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW NGUYEN whose telephone number is (571)270-5063. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff can be reached on (571)-272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AN/

/Michael Cuff/  
Supervisory Patent Examiner, Art Unit 3741